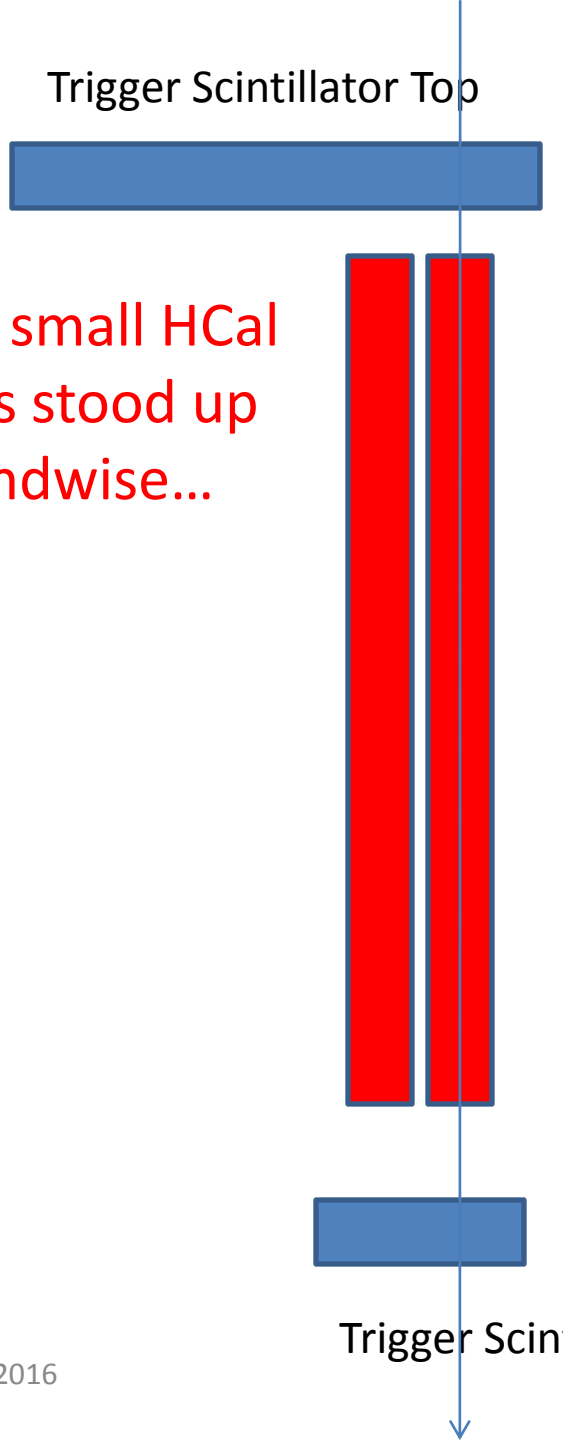
CU HCal Update

Sebastian Vazquez-Carson, Ron Belmont, JN

No specific testing action items for CU test stand
from Workfest / Last Meeting.

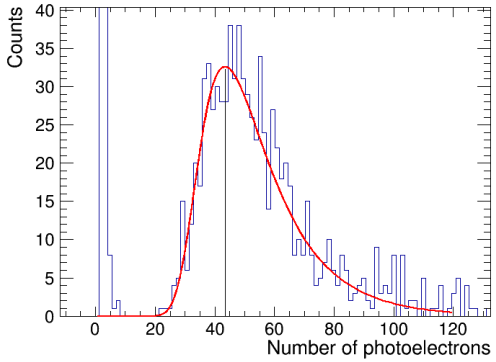
Try to work with the system to make basic observations.

Can we see cosmic rays through the long direction of the panels?



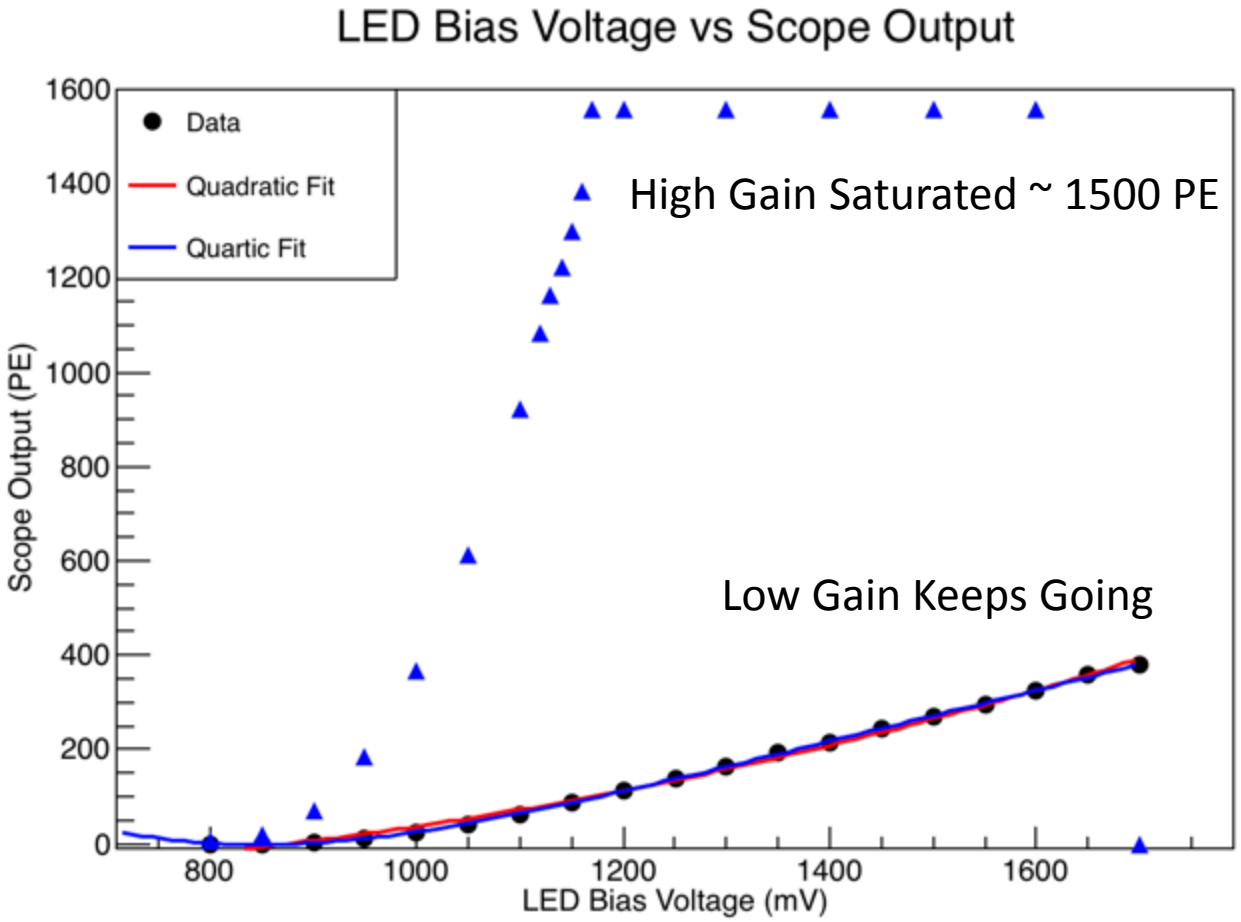
Cosmic Trigger on Coincidence of Top and Bottom and read out SiPM from both HCal tiles

From the MIP Peak in Cosmics going through the side (0.6 cm),

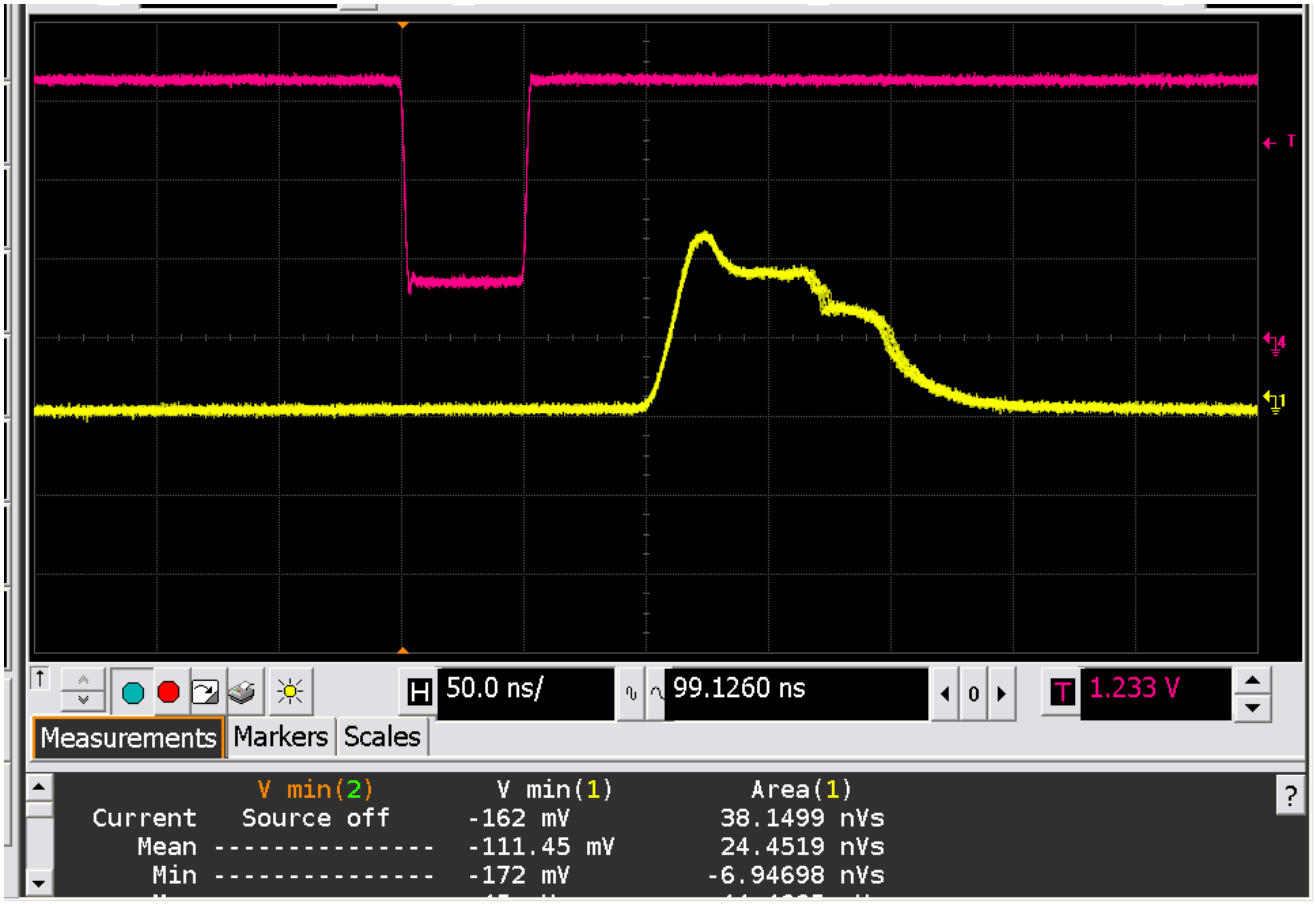


we expect a MIP going all the way down through at 11 50 PE

First check the dynamic range with LED pulses



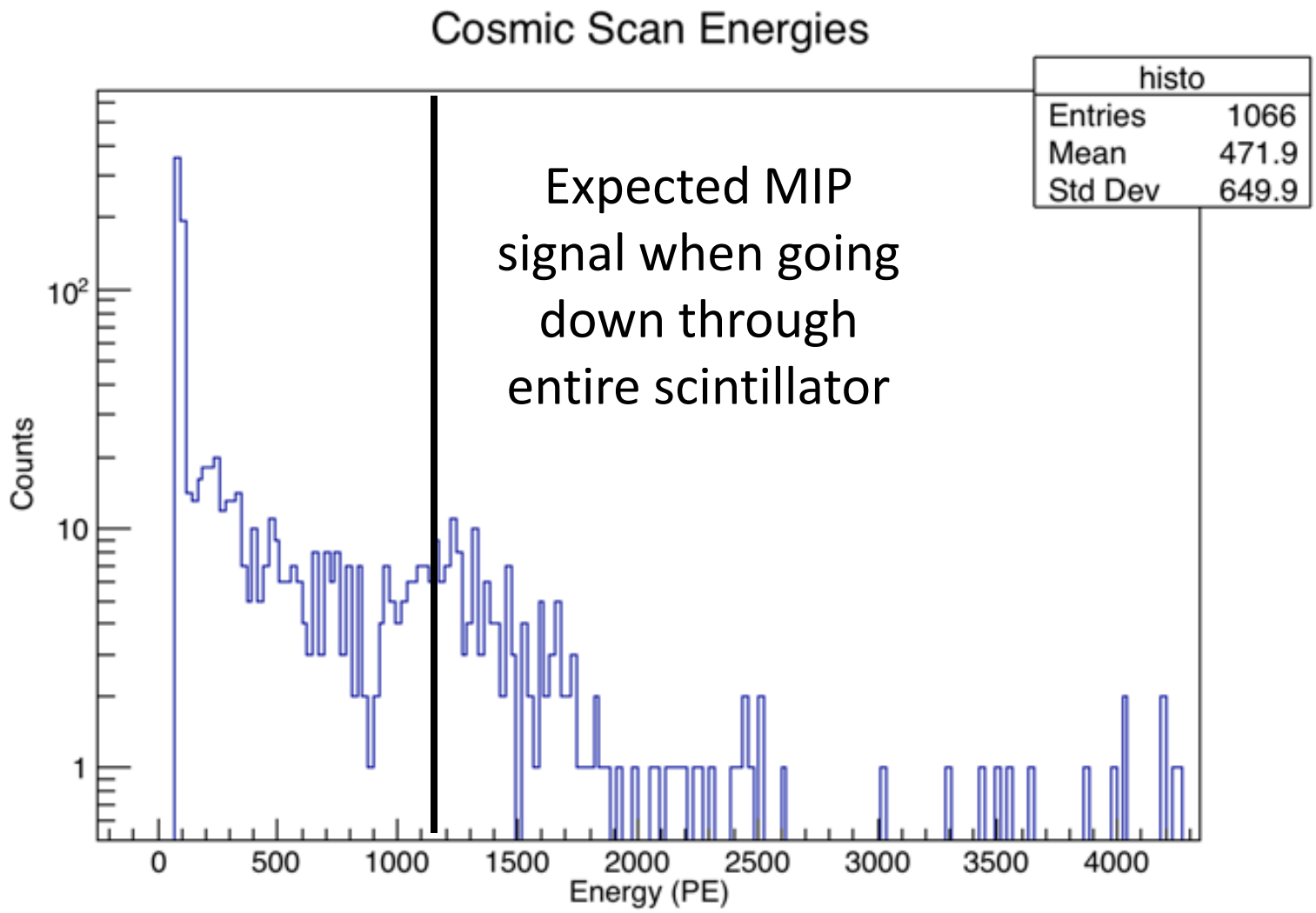
However, the Low Gain shows a problem above 1800 PE → the signal on the scope from the pre-amp / lollipop starts to have a significant distortion. Problem with LED? Thus, tried a bank of LEDs in parallel at lower Bias Voltage



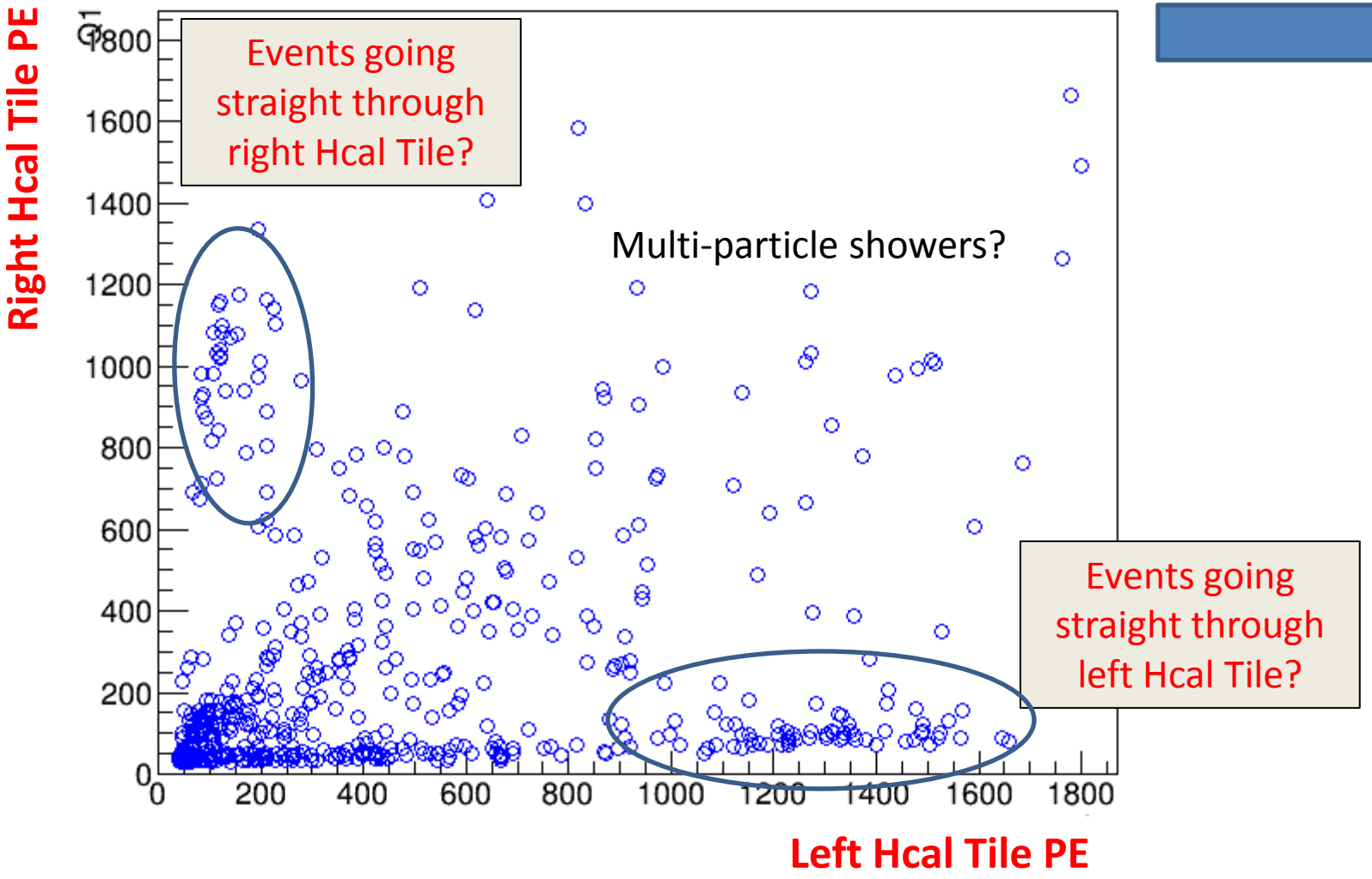
Strange Pulse Distortion Observed…

Has anyone else seen this effect with a large light signal?

This is at larger light signal than we expect in our Cosmic Test, so it is not a problem for this test but needs checking for real dynamic range.



Very low trigger rate – more than 7 days of data taking.
Question on whether this can provide anything quantitative.



Sebastian is working on a 3-d simulation of Cosmic trajectories to compare with data. However, there may be a large sample of multi-particle showers or correlated noise?